**WE CLAIM:**

1.  A method of optimizing reconnection of a point to point protocol link layer in a mobile device comprising the steps of:

5    monitoring whether the mobile device has entered a new zone;

starting a stabilization period when the mobile device enters a new zone;

checking whether the mobile device enters a different zone during the stabilization period;

if the mobile device enters a different zone during the stabilization period,

10    restarting the stabilization period and performing said checking step; and

if the mobile device does not enter a new zone during the stabilization period, determining whether the mobile device is in a new zone, reconnecting to the new zone if the mobile device is in the new zone, and otherwise performing no reconnection.

15    2.  The method of claim 1, wherein said monitoring step looks for a change in a system identifier.

3.  The method of claim 1, wherein said monitoring step looks for a change in a network identifier.

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4.  The method of claim 1, wherein said monitoring step looks for a change in a packet zone identifier.

5.  The method of claim 1, wherein said starting step includes setting a stabilization

25    timer.

6.  The method of claim 5, wherein the duration of said stabilization timer is less than one minute.

30    7.  The method of claim 5, wherein the duration of said stabilization timer is more than one minute.

8.    The method of claim 1, further comprising the steps of:

initializing a stabilization counter before said monitoring step;

incrementing said stabilization counter after the new zone or the different zone is

5    detected; and

checking whether said stabilization counter equals a maximum value after said

incrementing step, and if yes, cancelling said stabilization period and performing a

reconnection.

10    9.    The method of claim 1, wherein said method further comprises the steps of:

initializing a max return counter after said monitoring step finds the mobile device

has entered a new zone;

testing whether the device is in an original zone after a different zone is detected

during said checking step;

15    if said mobile device is in said original zone, incrementing the max return counter

and determining whether the max return counter has reached a threshold level and if

said max return counter has reached a threshold level, cancelling the stabilization

period and performing a reconnection in said original zone.

20    10.    The method of claim 1, wherein said method further comprises the steps of:

initializing and starting a countdown timer after said monitoring step finds the

mobile device has entered a new zone;

testing whether the device is back in an original zone after said different zone is

detected during said checking step;

25    if said mobile device is in said original zone, determining whether said countdown

timer has expired, and if said countdown timer has expired cancelling the stabilization

period and performing a reconnection in said original zone.

11.    The method of claim 10, further comprising the steps of:

30    determining whether said countdown timer has expired if said checking step finds

said mobile device is not in said different zone,

14

if said countdown timer has expired, checking whether said mobile device is in said original zone, and if yes cancelling said stabilization period and performing a reconnection.

5  12.  The method of claim 9, wherein said method further comprises the steps of:

initializing and starting a countdown timer after said monitoring step finds the mobile device has entered a new zone;

if said mobile device is in said original zone after said testing step, determining whether said countdown timer has expired, and if said countdown timer has expired

10  cancelling the stabilization period and performing a reconnection in said original zone.

13.  The method of claim 12, further comprising the steps of:

determining whether said countdown timer has expired if said checking step finds said mobile device is not in said different zone,

15  if said countdown timer has expired, checking whether said mobile device is in said original zone, and if yes cancelling said stabilization period and performing a reconnection.

14.  The method of claim 8, wherein said method further comprises the steps of:

20  initializing a max return counter after said monitoring step finds the mobile device has entered a new zone;

testing whether the device is in an original zone after a different zone is detected during said checking step;

if said mobile device is in said original zone, incrementing the max return counter

25  and determining whether the max return counter has reached a threshold level and if said max return counter has reached a threshold level, cancelling the stabilization period and performing a reconnection in said original zone.

15.  The method of claim 8, wherein said method further comprises the steps of:

30  initializing and starting a countdown timer after said monitoring step finds the mobile device has entered a new zone;

testing whether the device is back in an original zone after said different zone is detected during said checking step;

if said mobile device is in said original zone, determining whether said countdown timer has expired, and if said countdown timer has expired cancelling the stabilization
5      period and performing a reconnection in said original zone.


16.    The method of claim 15, further comprising the steps of:

determining whether said countdown timer has expired if said checking step finds said mobile device is not in said different zone,
10          if said countdown timer has expired, checking whether said mobile device is in said original zone, and if yes cancelling said stabilization period and performing a reconnection.


17.    The method of claim 14, wherein said method further comprises the steps of:
15      initializing and starting a countdown timer after said monitoring step finds the mobile device has entered a new zone;

if said mobile device is in said original zone after said testing step, determining whether said countdown timer has expired, and if said countdown timer has expired cancelling the stabilization period and performing a reconnection in said original zone.
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18.    The method of claim 17, further comprising the steps of:

determining whether said countdown timer has expired if said checking step finds said mobile device is not in said different zone,

if said countdown timer has expired, checking whether said mobile device
25      is in said original zone, and if yes cancelling said stabilization period and performing a reconnection.